



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/523,615	03/13/2000	Yang Cao	Cao-7	6571

7590 07/23/2004
Harness Dickey & Pierce PLC
P O Box 8910
Reston, VA 20195

EXAMINER

VOLPER, THOMAS E

ART UNIT	PAPER NUMBER
----------	--------------

2665

DATE MAILED: 07/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/523,615

Applicant(s)

CAO, YANG

Examiner

Thomas Volper

Art Unit

2665

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 May 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 7-15 and 29-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7-15 and 29-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 7 May 2004 have been fully considered but they are not persuasive.

In response to Applicant's arguments regarding claims 1, 2, 7-10, 12-15, 29-31, 34-37 and 39-41, the Examiner respectfully disagrees. Applicant argues that Oliva fails to disclose two types of network elements, but rather discloses all circuit switched network elements. However, the limitations of the claims do not exclude two different types of network elements from both being circuit switched network elements. The fact that SONET and ATM network elements operate according to different standards and use different data structures distinguishes them from each other. Applicant also argues that Oliva fails to disclose the transmission of port identification requests or responsive port detection signals. The Examiner has stated in the previous Office action that Oliva does disclose port identification requests being issued by a management system and directed towards another network element, wherein the management system may simply be a network element (see Oliva col. 5, line 59 – col. 6, line 4). The Examiner has relied upon Chao to meet the limitation of a responsive port detection signal, and thus cure the deficiency of Oliva. Chao discloses a ring system in which a link is restored between two nodes by sending a return-to-normal command from a sending node to a receiving node. The receiving node switches ports and sends a confirmation message back to the sending node (col. 15, lines 40-61). Applicant argues that this confirmation message does not represent a port detection signal. The Examiner interprets the port detection signal of the present invention

Art Unit: 2665

to be a type of confirmation message, since it is sent as a way to verify that the port identification was received by the first network element. The confirmation message of Chao serves this same basic purpose of verifying that information was received by one node from another node. It is obvious to include such a confirmation message in the invention of Oliva to be sure that the port identification information was received at the management system. Otherwise, the other network element would need to know to send the information again.

In response to Applicant's argument that claims 3, 4, 32 and 33 as well as claims 11 and 38 are allowable because the rejection of the base claims has been overcome, the Examiner respectfully disagrees. As discussed in the previous paragraph, Applicant's arguments have not overcome the rejection of the base claims.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, 7-10, 12-15, 29-31, 34-37, and 39-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oliva et al. (US 6,654,802) in view of Chao et al. (US 6,549,513).

Regarding claims 1, 15, 29 and 30, Oliva discloses a system that includes network elements (22 and 24) that comprise nodes, wherein each node has multiple ports (26) (col. 4, lines 19-65). A unique port identifier is stored in each network element for each port, and this identifier distinguishes that port from any other port on the network (col. 4, line 66 – col. 5, line

Art Unit: 2665

5). Upon connection of network elements (22 and 24), the source node transmits data to the destination node, and either network element (22 or 24) may comprise the source, while the other comprises the destination (col. 5, lines 16-20). Each source port (26) transmits the network element and port identifiers using transport overhead bytes (col. 5, lines 32-38). These transport overhead bytes represent the out of band channel of the present invention since they do not reduce the bandwidth available for payload data. The system also includes a management system for storing and determining the topology of the network, wherein either network element (22 or 24) may comprise the management system. The management system requests transfer of the identifiers (col. 5, line 59 – col. 6, line 4). Thus, either network element (22 or 24) may act as the management system and request port identifiers from the other network element. Oliva also discloses that network (40), which operates similarly to the embodiment described above, may operate pursuant to the SONET standard or SDH. Also, other standards such as ATM may be modified to include topology information in the overhead to operate according to the invention (col. 7, lines 41-46). Network elements operating according to the different standards mentioned above represent different types of network elements. Oliva fails to expressly disclose sending a port detection signal in response to receiving port identifiers. Oliva also fails to expressly disclose using different types of network elements in the same system. Chao discloses sending a confirmation message from one node (12) to another node (18) after receiving link information from the node (18) between ports on a bi-directional link (col. 15, lines 40-61). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to send a confirmation message, representing the port detection signal of the present invention, after receiving port identifier information from a source port in the invention of Oliva.

Art Unit: 2665

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to include different types of network elements in the same system, such as SONET and ATM, which Oliva discloses would be possible by suggesting the modification of ATM to include transport overhead. One of ordinary skill in the art would have been motivated to send the confirmation message to the source port to acknowledge receipt of the port information and notify the source port that the destination port was ready to receive information. One of ordinary skill in the art would have been motivated to use two types of elements in order to support a heterogeneous network that provides interoperability.

Regarding claims 2, 7, 14, 31, 34 and 41, Oliva discloses that any of the network elements may operate as a management system, which represents the leader NE of the present invention (col. 5, line 67 – col. 6, line 4). As described above, one network element may request port identification from another network element acting as the management system. The port identification information sent in response to the request represents the port binding information of the present invention. Oliva also discloses the network may operate according to the SONET, SDH or ATM standard (col. 7, lines 42-47). Thus, it is possible that elements of the same type, SONET for instance, may send a request to another element of that same type, which would represent the first type of the present invention.

Regarding claims 8 and 35, Oliva discloses that the system may operate according to the SDH standard, in which case the first type of NE may be an SDH NE (col. 7, lines 44-45)

Regarding claims 9, 10, 36 and 37, Oliva discloses that the system may operate according to the ATM standard, which is a packet switching technology. In that case, the first type of NE may be an ATM NE (col. 7, lines 45-47).

Art Unit: 2665

Regarding claims 12 and 39, Oliva discloses that the management system, which may be embodied in a network element, may periodically check or receive identifiers from the various network elements (col. 5, lines 63-67). As mentioned above, each identifier is associated with a different port on a different network element.

Regarding claims 13 and 40, Oliva discloses storing port binding information at each network element in a memory (col. 4, line 66 – col. 5, line 5).

4. Claims 3, 4, 32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over (US 6,654,802) in view of Chao et al. (US 6,549,513) as applied to claims 1, 2, 7-10, 12-15, 29-31, 34-37, and 39-41 above, and further in view of Au (US 6,473,397).

Regarding claims 3, 4, 32 and 33, the system provided by Oliva et al. in view of Chao et al. fails to expressly disclose a port identification request queue. Au discloses a system of interconnected nodes that communicate with each other by using a number of ports (Figure 5). Au also discloses that each of the ports comprises a queue (col. 8, line 60 – col. 9, line 4). Every cell received at a port enters the queue for that port. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use ports comprising a queue to receive the port identification requests in the system provided by Oliva et al. in view of Chao et al. One of ordinary skill in the art would have been motivated to do this to avoid dropping requests if multiple requests were received at a particular port.

Art Unit: 2665

5. Claims 11 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over (US 6,654,802) in view of Chao et al. (US 6,549,513) as applied to claims 1, 2, 7-10, 12-15, 29-31, 34-37, and 39-41 above, and further in view of Tounai et al. (US 5,870,382).

Regarding claims 11 and 38, the system provided by Oliva et al. in view of Chao et al. fail to expressly disclose that the port detection signal is a SONET/SDH protection switching message. Tounai discloses using K1 and K2 bytes for performing switching control (col. 4, lines 33-42). These K1 and K2 bytes represent the SONET/SDH protection switching message of the present invention. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use the K1 and K2 bytes of Tounai as a port detection signal in the system provided by Oliva et al. in view of Chao et al. One of ordinary skill in the art would have been motivated to do this to provide port connection information when a line switch was being made due to link failure.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

Art Unit: 2665

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication, or earlier communications from the examiner should be directed to Thomas Volper whose telephone number is 703-305-8405 and fax number is 703-746-9467. The examiner can normally be reached between 8:30am and 6:00pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu, can be reached at 703-308-6602. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4750.

Thomas E. Volper



July 14, 2004



**HUY D. VU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600**